JA-80Z – radio signal repeater

The JA-80Z signal repeater is a device belonging to Jablotron's OASiS system. It has been designed to extend the range of remote devices whose signal is not strong enough to communicate with the control panel or whose communication is unreliable. The repeater function lies in the transmission of a signal received from an enrolled device with a little delay. The delay ensures that a possible conflict between the repeater transmission and the transmitting device is avoided. Each device enrolled to the repeater must concurrently be enrolled to the control panel.

Repeater architecture

- The repeater has 40 addresses for devices and one address for an OASiS control panel.
- It copies the state of the PGX, PGY, IW and EW outputs of an OASiS control panel.
- The addresses are filled by sequential enrollment. The enrolled devices can only be deleted by resetting the repeater.
- Uses an LED and beeper (if connected – just for installing and testing purposes) to indicate the strength of the signal received from enrolled devices.
- Compatible with all OASiS detectors and remote controls with the exception of the JA-84P.
- It does not support transmissions for JA-8xF keypads, JA-80A sirens and other JA-80Z repeaters.
- Enables a hard-wired detector connection to the INP terminal.

The repeater must be equipped with a backup battery (e.g. SA-214/1,3) which ensures its operation when there is a power supply failure

A double-balanced INP input with a fixed natural reaction (delayed loop) is available for the connection of one hard-wire detector. Activation of this input is transmitted to the control panel as a signal from a device to which the repeater has been enrolled in the control panel. The reaction of this loop can be configured in the control panel.

The repeater front cover is protected with a built-in tamper sensor and the box must be protected against being torn off the wall with a tamper device delivered with the package.

Repeater enrollment mode

1. Switch the DIP4 switch to the "ON" position before you connect the power supply.
2. Open enrollment mode on the control panel and scroll to the required position for the repeater.
3. While the rechargeable battery is still disconnected, connect the power input of the repeater, thus sending the enrollment code and enrolling the device to the control panel. The control panel subsequently enrols itself to the repeater automatically.
4. You can exit enrollment mode by pressing the „#" key.
5. It is also possible to enrol other devices to the repeater by the insertion of batteries.
   - Correct enrollment of a device is always signalled by a one-second flash of the green LED.
   - Exceeding the maximum amount of devices (full memory) is indicated by several quick short flashes of the green LED and the device in question is not enrolled.
6. You can exit enrolment mode by switching off the DIP4 switch.

Adding devices to the repeater (additional enrollment mode)

- Switch the DIP4 switch to the "ON" position.
- The devices are enrolled by the insertion of batteries
- Correct enrollment of a device is always signalled by a one-second flash of the green LED.
- Exceeding the maximum amount of devices (full memory) is indicated by several quick short flashes of the green LED and the device in question is not enrolled.
- You can exit the enrollment mode by switching off the DIP4 switch.

Device signal indication

The number of flashes of the green LED on the control panel motherboard indicates the strength of the signal received from the given device upon its activation as follows:

1x	25%	(1/4) signal strength
2x	50%	(2/4) signal strength
3x	75%	(3/4) signal strength
4x	100%	(4/4) signal strength

If the beeper is connected is the signal strength indicated by one to four beeps as well.

Rear box tamper sensor installation

The rear tamper sensor (against the box being torn off the wall) works on the basis of a magnetic contact (supplied with the package). The contact must be installed during installation of the box.

1. Break off the prepared rectangular opening at the bottom of the box opposite the circuit board terminal.
2. The remains of the broken-off plastic moulding must be removed using a sharp tool (knife).
3. Put the box onto the selected surface and mark the fixing holes and the position of the prepared opening.
4. Attach the permanent contact magnet onto the marked surface.
5. Install and fix the box (the magnet goes through the rectangular box opening).
6. Stick the magnetic sensor (the second part with the conductors brought-out) to an interior side of the box (maximum separation from the magnet should be 2cm).
7. Connect the outputs to the TMP and COM terminals on the motherboard without a balance resistor.
8. Switch DIP2 to the ON position.

Description of terminals

INP	Double balanced input terminal (two 1kOhm resistors)
TMP	Rear tamper sensor terminal (not balanced)
COM	Common terminal for INP and TMP inputs
EW	Output, copies the state of the EW output of the enrolled control panel
IW	Output, copies the state of the IW output of the enrolled control panel
PGX	Output, copies the state of the PGX output of the enrolled control panel
PGY	Output, copies the state of the PGY output of the enrolled control panel
GND	Negative pole of the wired detector's and the temporary beeper's power supply
B	Possitive pole of the temporary beeper (negative is connected to the GND)
+U	Positive pole of the wired detector's power supply (protected by FU1 – F1A)

DIP switch description

DIP1	The input on the INP terminal is switched on (monitored) in "ON" position
DIP2	The rear tamper sensor is active in the "ON" position
DIP3	No function
DIP4	The enrollment mode is active in the "ON" position

Device reset

Resetting the whole device is irreversible and causes the deletion of the enrolled control panel and all enrolled devices from the repeater.

1. Switch off the 230V power output and disconnect the backup battery.
2. Connect the RESET jumper and leave it connected.
3. Connect the supply voltage and the battery.
4. Disconnect the RESET jumper.

Technical specifications

Power source	230 V / 50 Hz, max 0.1 A, protection class II
Power supply	type A (EN 50131-6)
Backup battery	12 V, 2.2 Ah
Backup power output	maximum continuous load 0.7 A
Number of wireless device addresses	40
Hard-wired inputs	1x double balanced input
	1x input reserved for the rear tamper contact
EW external warning output	switching to GND, max. 0.5A
IW internal warning output	switching to GND, max. 0.5A
PGX, PGY outputs	max. 0.1 A, switching to GND
Frequency (JA-82R)	868 MHz
Security grade	2
	according to EN50131-1, EN 50131-6 and EN 50131-5-3
Environmental class	II. indoor-general (-10 to +40°C)
	compliant with EN 50131-1
Radio emissions	ETSI EN 300220
EMC	EN 50130-4, EN 55022
Safety	EN 60950-1
Can be operated according to	ERC REC 70-03